



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------------|---------------------|------------------|
| 10/031,661 | 05/16/2002 | Hugh-Peter Granville Kelly | KEMP0006 | 4263 |
| 22862 | 7590 | 06/21/2004 | EXAMINER | |
| GLENN PATENT GROUP 3475 EDISON WAY, SUITE L MENLO PARK, CA 94025 | | | | WAKS, JOSEPH |
| | | ART UNIT | | PAPER NUMBER |
| | | 2834 | | |

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|--------------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/031,661 | KELLY, HUGH-PETER GRANVILLE | |
| Examiner | Joseph Waks | Art Unit 2834 | |

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) ____ is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ . | 6) <input type="checkbox"/> Other: ____ . |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one link linking the float to the armature as recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The amendment filed on April 5, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not

supported by the original disclosure is as follows: the at least one link linking the float to the armature.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

3. Claim 1 is objected to because of the following informalities: in line 12, “float(s)” is grammatically incorrect and renders the claim indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 4-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. the at least one link linking the float to the armature as recited in claim 1 is neither shown in the drawings nor support by the original specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kafka (US 3,362,336) in view of Raichlen et al. (US 4,594,853).

Kafka discloses in Figure 4 a linear generator having a stator 67 and an armature 65 linearly driven relative to the stator to generate electrical energy and a float 63 linked to the armature by link 64 and immersed in the sea to be subject to the action of waves to drive the armature, the float, the armature and the link constitute a wave-driven mass maintaining the submerged portion of the float neutrally buoyant.

Kafka also discloses in column 4, lines 72-74, that the arrangement of the generator is such that the armature can be moved only as a result of substantial wave action i.e. the mass the of the magnet or the armature is the prevailing mass in the system to be overcome only by a substantial wave action. Hence, the weight of the load and the links are negligible and their contribution to the effective parasitic mass is also negligible.

However, Kafka does not disclose the weight of the wave-driven mass being substantially equal to half the up-thrust provided by the water displaced by the float when fully immersed in the water.

Raichlen et al. disclose a wave powered generator having a neutrally buoyant float 14 that maintains the float with a half volume above the water and the other half of the float being submerged in the water for the purpose of exerting an equal force on the reciprocating equipment on the up and down strokes of the float and to avoid inadequate tracking of the wave motion. The weight of the wave-driven mass (i.e. the float, the armature and the link) being substantially equal to half the up-thrust provided by the water displaced by the float when immersed in the water is inherent to the structure disclosed by Raichlen et al.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the linear generator as taught by Kafka and to maintain maintains the float with a half volume above the water and the other half of the float being submerged in the water as taught by Raichlen et al. for the purpose of exerting an equal force on the reciprocating equipment on the up and down strokes of the float and to avoid inadequate tracking of the wave motion.

8. Claims 1, 4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klemm (DE 4338103 A1) in view of Kafka (US 3,362,336) and Raichlen et al. (US 4,594,853).

Klemm discloses in Figure 4 a linear generator occupying the average horizontal area that exceeds the horizontal area occupied by the float and any perimeter space surrounding the float, the generator having a stator STA and an armature LAU linearly driven relative to the stator to generate electrical energy and a float II linked to the armature by link and immersed in the sea to be subject to the action of waves to drive the armature, the float, the armature and the link constitute a wave-driven mass maintaining the submerged portion of the float neutrally buoyant.

However, Klemm does not disclose the weight of the wave-driven mass being substantially equal to half the up-thrust provided by the water displaced by the float when immersed in the water, and the water driven mass having weight of the float and the link being negligible compared with that of the armature.

Kafka discloses in column 4, lines 72-74, that the arrangement of the generator is such that the armature can be moved only as a result of substantial wave action i.e. the mass the of the magnet or the armature is the prevailing mass in the system to be overcome only by a substantial

wave action. Hence, the weight of the load and the links are negligible and their contribution to the effective parasitic mass is also negligible.

Raichlen et al. disclose a wave powered generator having a neutrally buoyant float 14 that maintains the float with a half volume above the water and the other half of the float being submerged in the water for the purpose of exerting an equal force on the reciprocating equipment on the up and down strokes of the float and to avoid inadequate tracking of the wave motion. The weight of the wave-driven mass (i.e. the float, the armature and the link) being substantially equal to half the up-thrust provided by the water displaced by the float when immersed in the water is inherent to the structure disclosed by Raichlen et al.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the linear generator as taught by Klemm and to maintain maintains the float with a half volume above the water and the other half of the float being submerged in the water as taught by Raichlen et al. for the purpose of exerting an equal force on the reciprocating equipment on the up and down strokes of the float and to avoid inadequate tracking of the wave motion.

It would have been further obvious to one having ordinary skill in the art at the time the invention was made to design the combined linear generator and to provide the water driven mass having weight of the float and the link being negligible compared with that of the armature as taught by Kafka, for the purpose of accommodating only substantial wave action, thus setting the low limit of the system operation.

Response to Arguments

9. Applicant's arguments filed on have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this particular case, Kafka discloses the apparatus essentially as claimed. Raichlen et al. disclose the wave-powered generator having a neutrally buoyant float. In combination, Kafka and Raichlen et al. disclose the invention as claimed.

Examiner respectfully disagrees with applicant's allegation that for the half-in half-out arrangement of me float in Raichlen et al., to have the stated effect of producing approximately equal forces on the up and down strokes, it is necessary that the remainder of me driven mass to be negligible.

The teaching of Raichlen et al. mainly addresses the selection of the float density in such way that during operation of the apparatus the float will remain half-submerged while following the wave motion. It does not specifically states that the weight of the parts connected to the float is negligible.

The major teaching is that this arrangement of the float that allows close tracking of the wave motion provides for maximum harnessing of the wave energy. It would involve only a routine skill in the art to select the proper density of the float and the weight of the armature to achieve both the close tracking of the wave motion by implementing the teaching of Raichlen et al. as well as to accommodate only substantial wave action i.e. to set the low limit of the system operation.

Therefore the teaching of Raichlen et al. is not only contradictory to, but also actually complementary with the system disclosed by Kafka by improving its ability to harnessing a larger range of wave motion.

10. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the material and actual weigh of the armature) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner directs applicant's attention to the claim language that addresses the relative weight of the armature versus the weight of the float and the link. The actual material and weight of the armature are not relevant to claimed features.

Allowable Subject Matter

11. Claims 5, and 8-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2834

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Communication

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E Schuberg can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1850.



Joseph Waks
Primary Examiner
Art Unit 2834

June 16, 2004